UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,550	02/09/2001	Akihiro Funakoshi	053466/0299	5276

22428 7590 02/03/2005

FOLEY AND LARDNER
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER	
SPECTOR, LORRAINE	
ART UNIT	**PAPER NUMBER**
1647	

DATE MAILED: 02/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/762,550	FUNAKOSHI ET AL.	
	Examiner	Art Unit	
	Lorraine Spector, Ph.D.	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/22/2004 has been entered.

Claims 14-26 are pending and under consideration.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 14-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 14 and 25 as amended are indefinite because it is not clear to what the IL-6 antagonist inhibits the binding of IL-6, IL-6 receptor or gp130. This is at issue because (a) lowering IL-6 levels, such as by administration of PYY would inherently reduce binding of IL-6 to its receptor (as molecules that are not present cannot bind), and (b) gp130 is a subunit of the IL-6 receptor that (i) does not bind IL-6, and (ii) is a subunit also of the receptors of several other cytokines, including IL-11, LIF, CNTF, oncostatin M, and cardiotrophin 1 ; see Cytokine Facts Book, 2nd ed., 1997, at page 499. Amendment of the claims to indicate that the IL-6 antagonist *binds to* IL-6, IL-6 receptor or gp130 would be remedial, not only of this rejection, but of the rejection under 35 U.S.C. §102(b) over Reed et al., below.

The remaining claims are rejected for depending from an indefinite claim.

Rejections Over Prior Art

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 14, 24 and 25 remain rejected under 35 U.S.C. 102(b) as being anticipated by Reed et al., Surgical Forum 48:179, for reasons of record in the previous Office Action mailed 10/6/2003.

Applicants traversal in the response received 10/22/2004 has been fully considered but is not deemed persuasive. Applicants argue that the Examiner errs in finding that Reed's observations imply that PYY reduces the physiological activity of IL-6. This argument has been fully considered but is not deemed persuasive because Reed specifically states at page 180, that "Prophylactic PYY significantly suppressed circulating levels of IL-6...", and that "therapeutic peptide YY resulted in significantly decreased serum IL-6 levels..." Therefore the Examiner's finding, which is that administration of PYY lowers IL-6 levels, is directly supported by the Reed disclosure, and is not a matter of conjecture or interpretation on the Examiner's part. Similarly, applicants argument that Reed does not disclose treatment is belied by the use of the term "therapeutic" by Reed. Applicants argument regarding blocking IL-6 binding as opposed to lowering circulating levels of IL-6 is not pertinent to this rejection, as the rejected claims do not contain such a limitation. Similarly, there is no issue in this case of 'altering the physiological activity" of IL-6. Reed administers PYY, which lowers levels of IL-6. Applicants allege in their argument that using an anti-IL-6 or anti-IL6 receptor antibody would somehow 'alter the physiological activity' of IL-6. Such is not the case. In both cases, the net amount of IL-6 activity is lowered, in Reed's case by lowering production of IL-6, and in applicants' case by inhibiting IL-6 that has already been produced. The net effect is the same. Applicants argument that Reed's teaching does not block signal transduction by IL-6 has been fully considered but is not deemed persuasive, as there is no such limitation in the rejected claims. The Examiner maintains that reducing the levels of IL-6 inhibits binding of IL-6 (which is

present in reduced amounts; molecules that are not present cannot bind) to IL-6 receptor, thus meeting the limitations of the claims.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 15-23 and 26 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Reed et al., Surgical Forum 48:179-180, 1997, in view of Sato et al., Cancer Research 53(4):851-6, February 1993, and/or Kishimoto et al., EP 0 791 359 A1 for reasons of record in the previous Office Action mailed 10/6/2003.

Applicants argument of this on the basis that Reed does not teach the use of an "IL-6 antagonist" has been fully considered, but is not deemed persuasive. As stated in the rejection, found in the Office action mailed 10/6/2003, "The person of ordinary skill in the art would have been motivated to do so by the teaching of Reed that *reduction of IL-6 levels by PYY*, and the teachings of the secondary references that the anti-IL-6R antibodies are useful for the treatment of conditions in which IL-6 is a factor." (Emphasis added.) The rejection does not asset, nor depend on, a finding that Reed administered an IL-6 antagonist.

Claims 14- 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al., Cancer Research 53(4):851-6, February 1993, and/or Kishimoto et al., EP 0 791 359 A1, either or both references in view of Gross et al., Hepato-Gastroenterol. 40:522-530, cited by applicants,

and Farkas et al., Neuroscience Letters 242(3):147-150. 2/20/98 for reasons of record in the previous Office Action mailed 10/6/2003.

Applicants argue that the mere *association* of IL-6 with acute pancreatitis would not provide motivation to the person of ordinary skill in the art to lower IL-6 levels. This argument has been fully considered but is not deemed persuasive because Farkas specifically teaches in the first paragraph of the paper that "Severe acute necrotizing pancreatitis is a life-threatening pathological condition. Its mortality rate is high and the outcome of individual cases is difficult to predict. There is a growing evidence that the overproduction of proinflammatory cytokines, such as tumor necrosis factor and interleukin-6, plays a crucial role in the pancreatic necrosis and the development of extrapancreatic complications." Given that IL-6 was known to be a proinflammatory cytokine, the Examiner is at a loss as to how applicants have reached the conclusion that association of such with a life-threatening medical condition would not suggest to the person of ordinary skill in the art the lowering of IL-6 levels would be beneficial. While it is true that not all markers are therapeutic targets, in this case, the person of ordinary skill in the art would immediately grasp that they are one and the same. It is the marker (IL-6) that contributes to the damage, as taught by Farkas, for example.

Applicants once again argue a lack of motivation to combine references. This argument has been fully considered but is not deemed persuasive. As evidenced by the primary references, Sato et al. and Kishimoto et al., and as stated in the statement of rejection, "Both references teach the use of anti-IL-6R antibodies for the treatment of IL-6 related conditions. " Thus it is quite clear that the state of the art was that it was known to treat IL-6 related conditions by inhibiting the effects of IL-6. It is not relevant whether or not they were treating acute pancreatitis. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

No claim is allowed.

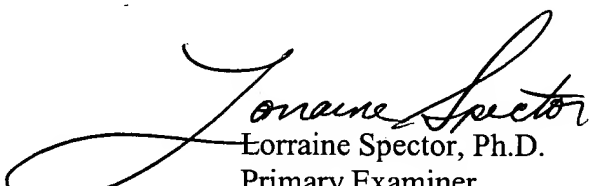
Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Lorraine M. Spector. Dr. Spector can normally be reached Monday through Friday, 9:00 A.M. to 3:00 P.M. at telephone number 571-272-0893.

If attempts to reach the Examiner by telephone are unsuccessful, please contact the Examiner's supervisor, Ms. Brenda Brumback, at telephone number 571-272-0961.

Certain papers related to this application may be submitted to Technology Center 1600 by facsimile transmission The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 C.F.R. § 1.6(d)). NOTE: If Applicant does submit a paper by fax, the original signed copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED so as to avoid the processing of duplicate papers in the Office.

Official papers filed by fax should be directed to 571-273-8300. Faxed draft or informal communications with the examiner should be directed to ***571-273-0893.***

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Lorraine Spector, Ph.D.
Primary Examiner